

3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series



- 25 mm basic system unit
- 50 mm module
- 2 mm grid spacing allows for high signal density at low cost
- “Eye of the Needle” compliant pin press-fit design reduces manufacturing time and cost
- Three contact mating levels for Early Mate Late Break or “Hot Swap” applications reduces manufacturing time and cost
- Feed through termination available for midplane applications
- Additional grounding rows available for improved ground bounce and EMI immunity
- Mates with 5 row 3M™ HSHM, UHM and CP2 Sockets
- End to end stackable with 5 row 3M™ HSHM, HM, and CP2 Headers
- See the Regulatory Information Appendix (RIA) in the “RoHS compliance” section of www.3Mconnectors.com for compliance information (RIA E1 & C1 apply)

Date Modified: August 5, 2015

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Physical

Insulation:

Material: Glass Filled Polyester (PBT)

Flammability: UL94V-0

Contact:

Material: Copper Alloy

Plating: See Ordering Information

Mechanical

Mating Force: $\leq 0.75\text{N/PIN}$

Withdrawl Force: $\geq 0.15\text{N/PIN}$

Mating and Un-mating Operations: 200 for KR plating

Electrical

Current Rating: 1.0 Amperes at 70°C with all contacts powered

Contact Resistance: $\leq 20\text{ m}\Omega$

Insulation Resistance: $\geq 10,000\text{ M}\Omega$

Test Voltage: 750 VAC_{RMS}

Environmental

Temperature Ratings: -55°C to +125°C

PCB Data

Recommended PCB Plated Through Hole: $\text{Ø } 0.6 \pm 0.05\text{ mm}$

Drill Hole Diameter: $\text{Ø } 0.7 \pm 0.02\text{ mm}$

Hole platings: Cu 25~50 μm , Sn < 10 μm

PCB thickness: 2.4 - 5.6 mm for 3.7 mm tails, 1.4 - 5.6 mm for 2.3 mm tails

Press-In Force: $\leq 204\text{N/pin}$ on nominal hole diameter

Retention Force: $\geq 13.5\text{N/pin}$ on nominal hole diameter

3M

Electronics Materials Solutions Division

Interconnect Solutions

<http://www.3Mconnectors.com>

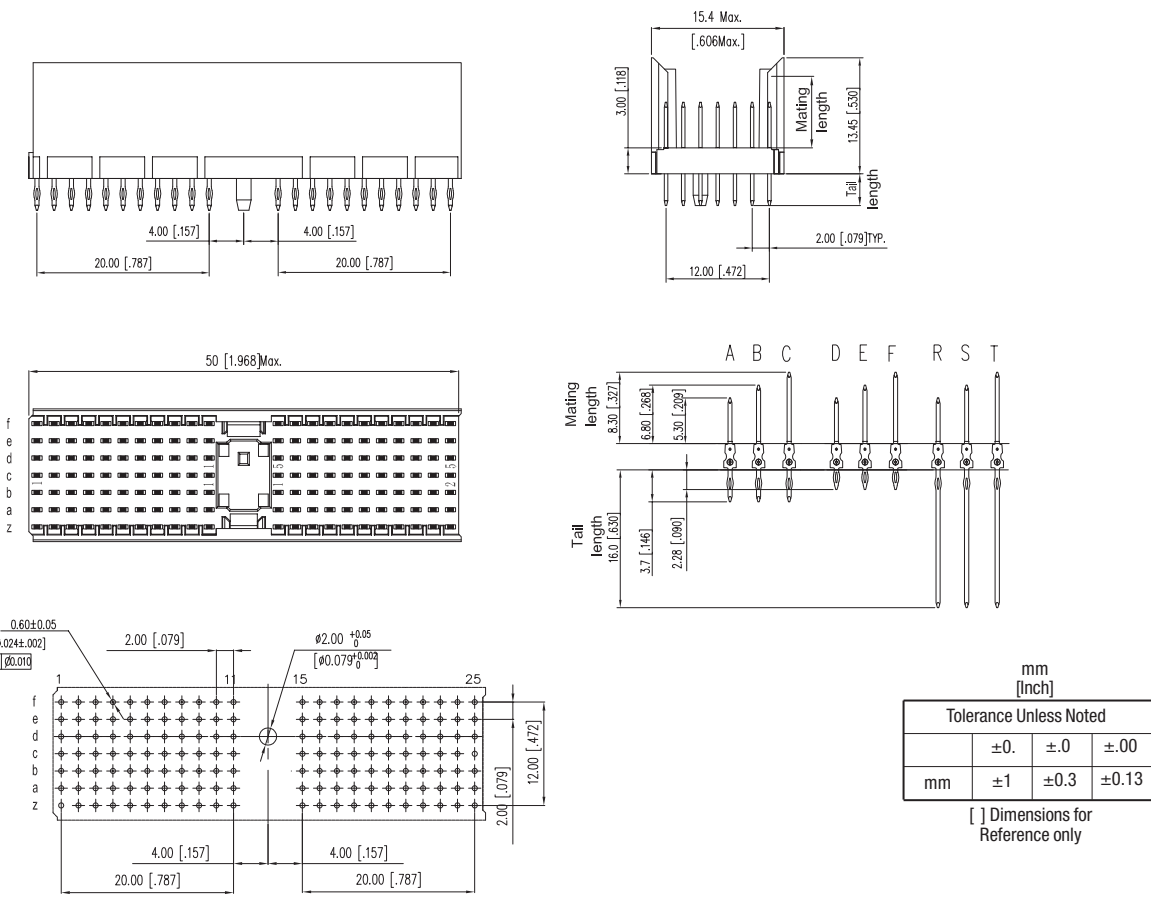
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Recommended PCB Layout

Ordering Information

CP2-HA110-XXX-XXXX

Loading Configurations

(See diagrams on following pages)

Grounding Options:

- G= with ground pins
- Blank= without ground pins
- EMLB Patterns

Primary Tail Length

- 1= 3.7 mm
- 2= 2.3 mm
- 4= 15.8 mm

Plating Options

- FJ= 10~20 μ" Gold Contact Area
100~200 μ" Matte Tin
50~80 μ" Nickel Underplate
(RIA E1 & C1 apply)
- KR= 30~40 μ" Gold Contact Area
100~200 μ" Matte Tin
50~80 μ" Nickel Underplate
(RIA E1 & C1 apply)
- KV= 30~40 μ" Mate End Gold Contact area
Gold Flash Tail Contact area
50~80 μ" Nickel Underplate
(RIA E1 & C1 apply)
For Primary Tail Length Option 4 only

- This diagram serves only for Part Number descriptive definitions.
- For standard product configuration please see following pages.

PLEASE CONTACT YOUR LOCAL SALES REPRESENTATIVE FOR CUSTOMER SPECIFIC PRODUCT CONFIGURATIONS.

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Sheet 2 of 5



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3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series

| CP2-HA110-E1-TG30 | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| F | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| D | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| C | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| B | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| A | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | |

| CP2-HA110-GE1-TG30 | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| F | C | C | C | C | C | C | C | C | C | C | | | | | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| E | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| D | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| C | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| B | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| A | A | A | A | A | A | A | A | A | A | A | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Z | C | C | C | C | C | C | C | C | C | C | | | | | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | |

| CP2-HA110-A1-TG30 | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| F | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| D | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| C | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| B | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| A | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | |

| CP2-HA110-GA1-TG30 | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| F | C | C | C | C | C | C | C | C | C | C | | | | | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| E | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| D | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| C | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| B | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| A | B | B | B | B | B | B | B | B | B | B | | | | | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| Z | C | C | C | C | C | C | C | C | C | C | | | | | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | |

3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series

| CP2-HA110-F1-KR | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|--|--|--|--|--|----|----|----|----|----|----|----|----|----|----|----|
| F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| D | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| C | B | B | B | B | B | B | B | B | B | B | B | | | | | | | | | B | B | B | B | B | B | B | B | B | B | B |
| B | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| A | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | | | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

| CP2-HA110-GF1-KR | | | | | | | | | | | Connector Type A22 | | | | | | | | | | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|----|--------------------|--|--|--|--|--|--|--|--|----|----|----|----|----|----|----|----|----|----|----|
| F | C | C | C | C | C | C | C | C | C | C | C | | | | | | | | | C | C | C | C | C | C | C | C | C | C | C |
| E | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| D | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| C | B | B | B | B | B | B | B | B | B | B | B | | | | | | | | | B | B | B | B | B | B | B | B | B | B | B |
| B | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| A | A | A | A | A | A | A | A | A | A | A | A | | | | | | | | | A | A | A | A | A | A | A | A | A | A | A |
| Z | C | C | C | C | C | C | C | C | C | C | C | | | | | | | | | C | C | C | C | C | C | C | C | C | C | C |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | | | | | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

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